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Samuel H. Dworetsky
AT&T CORP.
One AT&T Way
Room RA-207
Bedminster, NJ 07921

EXAMINER	
WONG, ALLEN C	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/874,872	PURI ET AL.	
	Examiner	Art Unit	
	Allen Wong	2621	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 September 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-16,18-22 and 27-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-16,18-22 and 27-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *6/5/01* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/18/07 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 9, 13, 15, 18 and 21 have been fully read and considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5, 7-16, 18-22 and 27-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (5,748,789) in view of Linzer (6,094,457).

Regarding claim 1, Lee discloses a method of encoding video content, the method comprising:

assigning a predefined model to each of at least two video content portions of the video content (col.42, ln.47-61; note each video object has an arbitrary shape, and that

each video object is predefined according to its shape, thus, each video object or video portion is assigned a predefined encoder model by a mask of alpha values or a binary mask; in fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982, where there are triangular portions that consist of each of elements 972, 974, 976, 978, 980 and 982 to form a model of a person 970; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b); and

routing each of the at least two video content portions to one of a plurality of encoders based on a respective one of the predefined models assigned to each of the at least two video content portions (col.42, ln.47-61, Lee discloses that each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus, each video object or video portion is routed or assigned a predefined encoder model by a mask of alpha values or a binary mask),

wherein the assigning a predefined model to each of the at least two video content portions (col.42, ln.47-61; note each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus, each video object or video portion is assigned a predefined encoder model by a mask of alpha values or a binary mask; in fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982, where there are triangular portions that consist of each of elements 972, 974, 976, 978, 980 and 982 to form a model of a person 970; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b) further comprises:

comparing descriptors associated with each of the at least two video content portions with corresponding stored model descriptors from a plurality of predefined content models (col.51, ln.4-59; note there are plural flags that can aid the determination of the video portions of the video content; col.50, ln.18-41, Lee discloses the comparison of the frames, in particular, the comparison is done with the shape of the first frame that contains its respective video portions and the shape of the second frame that contains its respective video portions), and

assigning each of the at least two video content portions to a respective best content model from the plurality of predefined content models based on the comparing of the descriptors (col.50, ln.27-37, the error computed from the inter-frame shape coding is then applied to assign the best content model based on the interframe comparison of the shapes between the first and second frame data).

Lee does not specifically disclose wherein each of the at least two video portions comprise a temporal, multiframe segment of the video content. However, Linzer teaches that each of the at least two video portions comprise a temporal, multiframe segment of the video content (fig.3, Linzer discloses that elements 32-1 to 32-n are the plural MPEG encoders, as disclosed in col.6, ln.56-58, in that each of the encoders 32-1 to 32-n compress a temporal, multiframe segment of the available video content known in MPEG as a group of frames (GOPs) or a group of frames organized in a temporal, multiframe or grouped frames that can be partitioned into multiple frame segments, and that the multiple frame segments are compressed by encoders 32-1 to 32-n). Therefore, it would have been obvious to one of ordinary skill in the art to combine the

teachings of Linzer into the system of Lee for permitting accurately, efficiently encoding multiple video streaming image data while maintaining high image quality (Linzer col.4, ln.39-42).

Regarding claim 2, Lee discloses the at least two video content portions are video segments (col.42, ln.47-61; note each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus, each video object or video portion is assigned a predefined encoder model by a mask of alpha values or a binary mask; in fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982, where there are triangular portions that consist of each of elements 972, 974, 976, 978, 980 and 982 to form a model of a person 970; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b).

Regarding claim 3, Lee discloses the at least two video content portions are video subsegments (col.42, ln.47-61; note each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus, each video object or video portion is assigned a predefined encoder model by a mask of alpha values or a binary mask; in fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982, where there are triangular portions that consist of each of elements 972, 974, 976, 978, 980 and 982 to form a model of a person 970; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b).

Regarding claim 4, Lee discloses the at least two video content portions are video regions of interest (fig.33, element 1502, col.42, ln.34-46, and fig.35, note video object information is extracted and segmented from the input video sequence, and

segments and subsegments of the regions of interest are identified, and in fig.35 discloses extracting multiple video objects 1540, 1542 and 1544b; fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b).

Regarding claim 5, Lee discloses a generic encoder model (fig.33 and col.42, ln.62-65; note object coders 1504-1508 encode video portions associated with the generic model; and fig.36, note the coder shown is used to encode the video portions).

Regarding claim 7, Lee discloses one of the plurality of predefined content models includes a generic video content model (fig.33 and col.42, ln.62-65; note object coders 1504-1508 encode video portions associated with the generic model; and fig.36, note the coder shown is used to encode the video portions).

Regarding claim 8, Lee discloses wherein assigning a predefined model to each of at least two video content portions of the video content further comprises assigning the generic video content model to a video content portion of the at least two video content portions if none of the other models from the plurality of predefined content models is assigned to the video content portion (col.42, ln.47-61; note each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus, each video object or video portion is assigned a predefined encoder model by a mask of alpha values or a binary mask; in fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982, where there are triangular portions that consist of each of elements 972, 974, 976, 978, 980 and 982 to form a model of a

person 970; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b;).

Regarding claim 9, Lee discloses a method of encoding video content, the method comprising:

identifying video subsegments and regions of interest within at least two video portions from the video content (fig.33, element 1502, col.42, ln.34-46, and fig.35, note video object information is extracted and segmented from the input video sequence, and segments and subsegments of the regions of interest are identified, and in fig.35 discloses extracting multiple video objects 1540, 1542 and 1544b; fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b);

assigning a predefined encoder model to each at least two video portion according to a characteristic of each of the at least two video portions, the predefined encoder model being chosen from a plurality of predefined models or a generic model (col.42, ln.47-61; note each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus, each video object or video portion is assigned a predefined encoder model by a mask of alpha values or a binary mask; in fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982, where there are triangular portions that consist of each of elements 972, 974, 976, 978, 980 and 982 to form a model of a person 970; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b);

encoding each of the at least two video portions associated with the generic encoder model with a generic encoder (fig.33 and col.42, ln.62-65; note object coders 1504-1508 encode video portions associated with the generic model; and fig.36, note the coder shown is used to encode the video portions); and

encoding each of the at least two video portions associated with the plurality of predefined encoder models with an encoder chosen from a plurality of encoders, each of the plurality of encoders being associated with one of the plurality of predefined models (fig.33 and col.43, ln.10-15; note the multiplexer 1510 is used to multiplex and encode video portions from plural video object encoders 1504-1508; and fig.36, note the coder shown is used to encode the video portions), wherein

the assigning a predefined encoder model to each of the at least two video portions according to a characteristic of each of the at least two video portions (col.42, ln.47-61; note each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus, each video object or video portion is assigned a predefined encoder model by a mask of alpha values or a binary mask; in fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982, where there are triangular portions that consist of each of elements 972, 974, 976, 978, 980 and 982 to form a model of a person 970; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b) further comprises:

comparing first descriptors associated with the at least two video portions and second descriptors associated with the subsegments and the regions of interest with corresponding stored model descriptors from a plurality of predefined content models

(col.51, ln.4-59; note there are plural flags that can aid the determination of the video portions of the video content; col.50, ln.18-41, Lee discloses the comparison of the frames, in particular, the comparison is done with the shape of the first frame that contains its respective video portions and the shape of the second frame that contains its respective video portions), and

assigning each of the at least two video content portions to a respective best content model based on the comparing of the first and the second descriptors (col.50, ln.27-37, the error computed from the inter-frame shape coding is then applied to assign the best content model based on the interframe comparison of the shapes between the first and second frame data).

Lee does not specifically disclose wherein each of the at least two video portions comprise a temporal, multiframe segment of the video content. However, Linzer teaches that each of the at least two video portions comprise a temporal, multiframe segment of the video content (fig.3, Linzer discloses that elements 32-1 to 32-n are the plural MPEG encoders, as disclosed in col.6, ln.56-58, in that each of the encoders 32-1 to 32-n compress a temporal, multiframe segment of the available video content known in MPEG as a group of frames (GOPs) or a group of frames organized in a temporal, multiframe or grouped frames that can be partitioned into multiple frame segments, and that the multiple frame segments are compressed by encoders 32-1 to 32-n). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Linzer into the system of Lee for permitting accurately, efficiently encoding

multiple video streaming image data while maintaining high image quality (Linzer col.4, ln.39-42).

Regarding claim 10, Lee discloses producing the first descriptors associated with the at least two video portions of the video content (col.51, ln.4-59; note there are plural flags that can aid the determination of the video portions of the video content; col.50, ln.18-41, Lee discloses the comparison of the frames, in particular, the comparison is done with the shape of the first frame that contains its respective video portions and the shape of the second frame that contains its respective video portions); producing the second descriptors associated with the video subsegments and the regions of interest (col.51, ln.4-59; note there are plural flags that can aid the determination of the video portions of the video content; col.50, ln.18-41, Lee discloses the comparison of the frames, in particular, the comparison is done with the shape of the first frame that contains its respective video portions and the shape of the second frame that contains its respective video portions).

Regarding claim 11, Lee discloses encoding the first and second descriptors (fig.33 and col.43, ln.10-15; note the multiplexer 1510 is used to multiplex and encode video portions from plural video object encoders 1504-1508; and fig.36, note the coder shown is used to encode the video portions, that includes coding the first and second descriptors).

Regarding claim 12, Lee discloses wherein the first and second descriptors are used to determine whether the generic encoder or an encoder from a plurality of encoders was used to encode the at least two video portions (fig.33 and col.43, ln.10-

15; note the multiplexer 1510 is used to multiplex and encode video portions from plural video object encoders 1504-1508; and fig.36, note the coder shown is used to encode the video portions, that includes coding the first and second descriptors).

Regarding claim 13, Lee discloses a method of encoding video content, the method comprising:

if a video portion of at least two video portions of the video content relates to one of a plurality of predefined encoder models (fig.33, element 1502, col.42, ln.34-46, and fig.35, note video object information is extracted and segmented from the input video sequence, and segments and subsegments of the regions of interest are identified, and in fig.35 discloses extracting multiple video objects 1540, 1542 and 1544b; fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b),

assigning the video content portion to a related, predefined encoder model chosen from the plurality of predefined encoder models (col.42, ln.47-61; note each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus, each video object or video portion is assigned a predefined encoder model by a mask of alpha values or a binary mask; in fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982, where there are triangular portions that consist of each of elements 972, 974, 976, 978, 980 and 982 to form a model of a person 970; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b);

if a video content portion of the at least two video content portions of the video content does not relate to one of the plurality of predefined encoder models, assigning the video content portion to a generic encoder model (fig.33 and col.42, ln.62-65, Lee discloses the object coders 1504-1508 are used to encode the video portions associated with the generic model, in fig.36, the coder shown is used to encode the video portions in a generic manner or model);

encoding each of the at least two video content portions associated with the generic encoder model using a generic encoder (fig.33 and col.42, ln.62-65; note object coders 1504-1508 encode video portions associated with the generic model; and fig.36, note the coder shown is used to encode the video portions in a generic manner or model); and

encoding each of the at least two video content portions associated with one of the predefined encoder models with an encoder from a plurality of encoders (fig.33 and col.43, ln.10-15; note the multiplexer 1510 is used to multiplex and encode video portions from plural video object encoders 1504-1508; and fig.36, note the coder shown is used to encode the video portions),

wherein the assigning the video content portion to a related, predefined encoder model chosen from the plurality of predefined encoder models (col.42, ln.47-61; note each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus, each video object or video portion is assigned a predefined encoder model by a mask of alpha values or a binary mask; in fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982, where there are

triangular portions that consist of each of elements 972, 974, 976, 978, 980 and 982 to form a model of a person 970; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b) further comprises:

comparing descriptors associated with the video content portion with corresponding stored model descriptors from a plurality of predefined encoder models (col.51, ln.4-59; note there are plural flags that can aid the determination of the video portions of the video content; col.50, ln.18-41, Lee discloses the comparison of the frames, in particular, the comparison is done with the shape of the first frame that contains its respective video portions and the shape of the second frame that contains its respective video portions), and

assigning the video content portion to a best encoder model from the plurality of predefined encoder models based on the comparing of the descriptors (col.50, ln.27-37, the error computed from the inter-frame shape coding is then applied to assign the best content model based on the interframe comparison of the shapes between the first and second frame data).

Lee does not specifically disclose wherein each of the at least two video portions comprise a temporal, multiframe segment of the video content. However, Linzer teaches that each of the at least two video portions comprise a temporal, multiframe segment of the video content (fig.3, Linzer discloses that elements 32-1 to 32-n are the plural MPEG encoders, as disclosed in col.6, ln.56-58, in that each of the encoders 32-1 to 32-n compress a temporal, multiframe segment of the available video content known in MPEG as a group of frames (GOPs) or a group of frames organized in a temporal,

multiframe or grouped frames that can be partitioned into multiple frame segments, and that the multiple frame segments are compressed by encoders 32-1 to 32-n). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Linzer into the system of Lee for permitting accurately, efficiently encoding multiple video streaming image data while maintaining high image quality (Linzer col.4, ln.39-42).

Regarding claim 14, Lee discloses wherein each encoder from a plurality of encoders is associated with one of the predefined encoder models of the plurality of predefined encoder models (fig.33 and col.43, ln.10-15; note the multiplexer 1510 is used to multiplex and encode video portions from plural video object encoders 1504-1508; and fig.36, note the coder shown is used to encode the video portions).

Regarding claim 15, Lee discloses a method of encoding video content divided into a at least two portions (fig.33, element 1502, col.42, ln.34-46, and fig.35, note video object information is extracted and segmented from the input video sequence, and segments and subsegments of the regions of interest are identified, and in fig.35 discloses extracting multiple video objects 1540, 1542 and 1544b; fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b), each of the at least two portions being associated with either a generic encoder model or an encoder model chosen from a plurality of predefined encoder models (fig.33 and col.42, ln.62-65; note object coders 1504-1508 encode video portions associated with the generic model;

and fig.36, note the coder shown is used to encode the video portions), the method comprising:

comparing descriptors associated with the at least two portions with corresponding stored model descriptors from a plurality of predefined encoder models (col.51, ln.4-59; note there are plural flags that can aid the determination of the video portions of the video content; col.50, ln.18-41, Lee discloses the comparison of the frames, in particular, the comparison is done with the shape of the first frame that contains its respective video portions and the shape of the second frame that contains its respective video portions);

assigning each of the at least two portions to a respective best encoder model from the plurality of predefined encoder models based on the comparing of the descriptors (col.50, ln.27-37, the error computed from the inter-frame shape coding is then applied to assign the best content model based on the interframe comparison of the shapes between the first and second frame data);

routing each of the at least two portions that is not assigned a respective best encoder model from the plurality of encoder models to a generic encoder (fig.33 and col.42, ln.62-65, Lee discloses the object coders 1504-1508 are used to encode the video portions associated with the generic model, in fig.36, the coder shown is used to encode the video portions in a generic manner or model); and

routing each of the at least two portions assigned to the respective best encoder model of the plurality of predefined encoder models to an encoder associated with the respective best encoder model (col.50, ln.27-37, the error computed from the inter-

frame shape coding is then applied to assign the best content model based on the interframe comparison of the shapes between the first and second frame data).

Lee does not specifically disclose wherein each of the at least two video portions comprise a temporal, multiframe segment of the video content. However, Linzer teaches that each of the at least two video portions comprise a temporal, multiframe segment of the video content (fig.3, Linzer discloses that elements 32-1 to 32-n are the plural MPEG encoders, as disclosed in col.6, ln.56-58, in that each of the encoders 32-1 to 32-n compress a temporal, multiframe segment of the available video content known in MPEG as a group of frames (GOPs) or a group of frames organized in a temporal, multiframe or grouped frames that can be partitioned into multiple frame segments, and that the multiple frame segments are compressed by encoders 32-1 to 32-n). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Linzer into the system of Lee for permitting accurately, efficiently encoding multiple video streaming image data while maintaining high image quality (Linzer col.4, ln.39-42).

Regarding claim 16, Lee discloses wherein each encoder from a plurality of encoders is optimized for each predefined encoder model of the plurality of encoder models (fig.33 and col.43, ln.10-15; note the multiplexer 1510 is used to multiplex and encode video portions from plural video object encoders 1504-1508; and fig.36, note the coder shown is used to encode the video portions, thus optimizing the encoders for each predefined model of plural encoder models).

Regarding claim 18, Lee discloses a method of producing a bitstream coded according to video content, the method comprising:

associating each of at least two portions of the video content to either a generic encoder model or a predefined encoder model chosen from a plurality of predefined encoder models (col.42, ln.47-61; note each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus, each video object or video portion is assigned a predefined encoder model by a mask of alpha values or a binary mask; in fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982, where there are triangular portions that consist of each of elements 972, 974, 976, 978, 980 and 982 to form a model of a person 970; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b);

routing each of the at least two portions associated with the generic encoder model to a generic encoder (fig.33 and col.42, ln.62-65; note object coders 1504-1508 encode video portions associated with the generic model; and fig.36, note the coder shown is used to encode the video portions in a generic manner or model); and

routing each of the at least two portions associated with an encoder model of the plurality of predefined encoder models to one of a plurality of encoders, wherein each encoder of the plurality of encoders is associated with one of the predefined encoder models (fig.33 and col.43, ln.10-15; note the multiplexer 1510 is used to multiplex and encode video portions from plural video object encoders 1504-1508; and fig.36, note the coder shown is used to encode the video portions),

wherein the associating each of the at least two portions of the video content to either a generic encoder model or a predefined encoder model chosen from a plurality of predefined encoder models (col.42, ln.47-61; note each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus, each video object or video portion is assigned a predefined encoder model by a mask of alpha values or a binary mask; in fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982, where there are triangular portions that consist of each of elements 972, 974, 976, 978, 980 and 982 to form a model of a person 970; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b) further comprises:

comparing descriptors associated with each of the at least two portions with corresponding stored model descriptors from the plurality of predefined encoder models (col.51, ln.4-59; note there are plural flags that can aid the determination of the video portions of the video content; col.50, ln.18-41, Lee discloses the comparison of the frames, in particular, the comparison is done with the shape of the first frame that contains its respective video portions and the shape of the second frame that contains its respective video portions), and

associating each of the at least two portions with a respective best encoder model from the plurality of predefined encoder models or the generic encoder model based on the comparing of the descriptors (col.50, ln.27-37, the error computed from the inter-frame shape coding is then applied to assign the best content model based on the interframe comparison of the shapes between the first and second frame data).

Lee does not specifically disclose wherein each of the at least two video portions comprise a temporal, multiframe segment of the video content. However, Linzer teaches that each of the at least two video portions comprise a temporal, multiframe segment of the video content (fig.3, Linzer discloses that elements 32-1 to 32-n are the plural MPEG encoders, as disclosed in col.6, ln.56-58, in that each of the encoders 32-1 to 32-n compress a temporal, multiframe segment of the available video content known in MPEG as a group of frames (GOPs) or a group of frames organized in a temporal, multiframe or grouped frames that can be partitioned into multiple frame segments, and that the multiple frame segments are compressed by encoders 32-1 to 32-n). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Linzer into the system of Lee for permitting accurately, efficiently encoding multiple video streaming image data while maintaining high image quality (Linzer col.4, ln.39-42).

Regarding claim 19, Lee discloses multiplexing each portion and transmitting each portion in a bitstream (fig.33 and col.43, ln.10-15; note the multiplexer 1510 is used to multiplex and encode video portions from plural video object encoders 1504-1508; and fig.36, note the coder shown is used to encode the video portions).

Regarding claim 20, Lee discloses locating subsegments and regions of interest in the extracted portions (fig.33, element 1502, col.42, ln.34-46, and fig.35, note video object information is extracted and segmented from the input video sequence, and segments and subsegments of the regions of interest are identified, and in fig.35 discloses extracting multiple video objects 1540, 1542 and 1544b; fig.27A, note there

are at least two video portions, elements 972, 974, 976, 978, 980 and 982; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b).

Regarding claim 21, Lee discloses a method of encoding a bitstream using a plurality of encoders, the method comprising:

mapping each of at least two segments extracted from video content to a predefined encoder model (col.42, ln.47-61; note each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus, each video object or video portion is assigned a predefined encoder model by a mask of alpha values or a binary mask; in fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982, where there are triangular portions that consist of each of elements 972, 974, 976, 978, 980 and 982 to form a model of a person 970; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b); and

routing the at least two extracted and mapped segments to one of the plurality of encoders based on the mapping to the respective predefined encoder model (col.42, ln.47-61, Lee discloses that each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus, each video object or video portion is routed or assigned a predefined encoder model by a mask of alpha values or a binary mask),

wherein the mapping each of at least two segments extracted from the video content to a predefined encoder model (col.42, ln.47-61; note each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus,

each video object or video portion is assigned a predefined encoder model by a mask of alpha values or a binary mask; in fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982, where there are triangular portions that consist of each of elements 972, 974, 976, 978, 980 and 982 to form a model of a person 970; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b) further comprises:

comparing descriptors associated with each of the at least two extracted segments with corresponding stored model descriptors from the plurality of predefined encoder models (col.51, ln.4-59; note there are plural flags that can aid the determination of the video portions of the video content; col.50, ln.18-41, Lee discloses the comparison of the frames, in particular, the comparison is done with the shape of the first frame that contains its respective video portions and the shape of the second frame that contains its respective video portions), and

mapping each of the at least two extracted segments to a respective best encoder model from the plurality of predefined encoder models based on the comparing (col.50, ln.27-37, the error computed from the inter-frame shape coding is then applied to assign the best content model based on the interframe comparison of the shapes between the first and second frame data).

Lee does not specifically disclose wherein each of the at least two video portions comprise a temporal, multiframe segment of the video content. However, Linzer teaches that each of the at least two video portions comprise a temporal, multiframe segment of the video content (fig.3, Linzer discloses that elements 32-1 to 32-n are the

plural MPEG encoders, as disclosed in col.6, ln.56-58, in that each of the encoders 32-1 to 32-n compress a temporal, multiframe segment of the available video content known in MPEG as a group of frames (GOPs) or a group of frames organized in a temporal, multiframe or grouped frames that can be partitioned into multiple frame segments, and that the multiple frame segments are compressed by encoders 32-1 to 32-n). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Linzer into the system of Lee for permitting accurately, efficiently encoding multiple video streaming image data while maintaining high image quality (Linzer col.4, ln.39-42).

Regarding claim 22, Lee discloses locating subsegments and regions of interest in the extracted segments (fig.33, element 1502, col.42, ln.34-46, and fig.35, note video object information is extracted and segmented from the input video sequence, and segments and subsegments of the regions of interest are identified, and in fig.35 discloses extracting multiple video objects 1540, 1542 and 1544b; fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b).

Regarding claims 27-29, Lee discloses a coded bitstream having portions of the bitstream encoded using different encoders according to encoder models associated with a subject matter of each portion of the bitstream, the coded bitstream encoded according to the method of claims 1, 18 and 21, respectively (fig.33 and col.42, ln.62-65; note different video object coders 1504-1508 encode video portions associated with

the generic model; col.43, ln.10-15; note the multiplexer 1510 is used to multiplex and encode video portions from plural different video object encoders 1504-1508).

Regarding claim 30, Lee discloses wherein the assigning a predefined model to each of at least two video content portions of the video content portions of the video content further comprises assigning a different predefined model to each of the at least two video content portions of the video content (col.42, ln.47-61; note each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus, each video object or video portion is assigned a predefined encoder model by a mask of alpha values or a binary mask; in fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982, where there are triangular portions that consist of each of elements 972, 974, 976, 978, 980 and 982 to form a model of a person 970; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b; fig.33 and col.42, ln.62-65; note different video object coders 1504-1508 encode video portions associated with the generic model; col.43, ln.10-15; note the multiplexer 1510 is used to multiplex and encode video portions from plural different video object encoders 1504-1508).

Regarding claim 31, Lee discloses wherein the assigning a predefined encoder model to each of at least two video portions according to a characteristic of each of the at least two video further comprises assigning a different predefined encoder model to each of the at least two video portions of the video content (col.42, ln.47-61; note each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus, each video object or video portion is assigned a predefined encoder

model by a mask of alpha values or a binary mask; in fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982, where there are triangular portions that consist of each of elements 972, 974, 976, 978, 980 and 982 to form a model of a person 970; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b; fig.33 and col.42, ln.62-65; note different video object coders 1504-1508 encode video portions associated with the generic model; col.43, ln.10-15; note the multiplexer 1510 is used to multiplex and encode video portions from plural different video object encoders 1504-1508).

Regarding claim 32, Lee discloses wherein the assigning the video content portion to a related, predefined encoder model chosen from the plurality of predefined encoder models further comprises assigning each of the at least two video content portions of the video content to a different one of the predefined encoder models (col.42, ln.47-61; note each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus, each video object or video portion is assigned a predefined encoder model by a mask of alpha values or a binary mask; in fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982, where there are triangular portions that consist of each of elements 972, 974, 976, 978, 980 and 982 to form a model of a person 970; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b; fig.33 and col.42, ln.62-65; note different video object coders 1504-1508 encode video portions associated with the generic model; col.43, ln.10-15; note the multiplexer 1510 is used to multiplex and encode video portions from plural different video object encoders 1504-1508).

Regarding claim 33, Lee discloses wherein assigning each of the at least two portions to a respective best encoder model from the plurality of predefined encoder models based on the comparing of the descriptors further comprises assigning each of the at least two portions to a different one of the plurality of predefined encoder models (col.50, ln.27-37, the error computed from the inter-frame shape coding is then applied to assign the best content model based on the interframe comparison of the shapes between the first and second frame data).

Regarding claim 34, Lee discloses the associating each of the at least two portions of the video content to either a generic encoder model or a predefined encoder model further comprises associating each of the at least two portions of the video content to a different encoder model chosen from the generic encoder model of the plurality of predefined encoder models (col.42, ln.47-61; note each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus, each video object or video portion is assigned a predefined encoder model by a mask of alpha values or a binary mask; in fig.27A, note there are at least two video portions, elements 972, 974, 976, 978, 980 and 982, where there are triangular portions that consist of each of elements 972, 974, 976, 978, 980 and 982 to form a model of a person 970; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b; fig.33 and col.42, ln.62-65; note different video object coders 1504-1508 encode video portions associated with the generic model; col.43, ln.10-15; note the multiplexer

1510 is used to multiplex and encode video portions from plural different video object encoders 1504-1508).

Regarding claim 35, Lee discloses wherein the mapping each of at least two segments extracted from the video content to a predefined encoder model further comprises mapping each of the at least two segments to a different predefined encoder model (col.42, ln.47-61, Lee discloses that each video object has an arbitrary shape, and that each video object is predefined according to its shape, thus, each video object or video portion is routed or assigned a predefined encoder model by a mask of alpha values or a binary mask; fig.35, note frame 1538 consists of multiple portions 1540, 1542, 1544a and 1544b; fig.33 and col.42, ln.62-65; note different video object coders 1504-1508 encode video portions associated with the generic model; col.43, ln.10-15; note the multiplexer 1510 is used to multiplex and encode video portions from plural different video object encoders 1504-1508).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen Wong whose telephone number is (571) 272-7341. The examiner can normally be reached on Mondays to Thursdays from 8am-6pm Flextime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Allen Wong
Primary Examiner
Art Unit 2621

AW
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